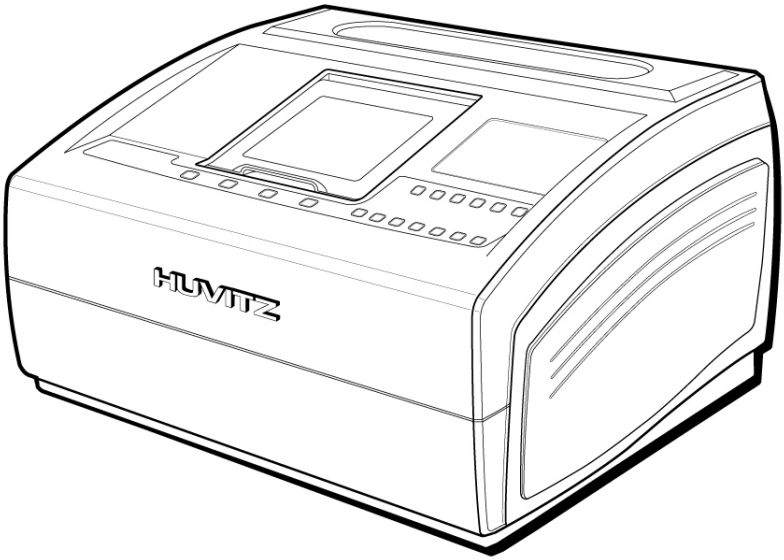
Operator's Manual

Excelon EZ



Huvitz
Pacing Progress toward People

IMPORTANT NOTICE

This product may malfunction due to electromagnetic waves caused by portable personal telephones, transceivers, radio-controlled toys, etc. Be sure to avoid having the above objects, which affect the normal operation of the product, brought near the product.

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1. Introduction

1.1 System Configuration

- Edger (CPE-3000)
- Frame Reader & Blocker (CFR-3000)

1.2 Main Features

- All the finishing processes, tracing to edging, are fully operated with the advanced 3D Digital Technology optimizing the productivity and efficiency.

Edging / Material	Beveling	Flat Edging	Polishing
Plastic	○	○	○
Glass	○	○	X
High Index	○	○	○
Polycarbonate	○	○	○
Trivex®	○	○	○

- High Resolution TFT-LCD Color Screen and the Intuitive Icon-based User Interface are harmonized to offer the maximum convenience for everyday use.

- The "Digital Pattern Layout" modifies the lens shape in left/right, top/bottom as well as circumference and optimizes the fitting challenge for Rimless.

- All the processes from lens layout to selection of edging options can be completed through on one-page display without moving to other pages.

- Test Mode enables the operator to effectively perform the routine maintenance without the technical assistance.

- Any shape and materials of frames from rimless to goggles are automatically and

precisely scanned with 3D technology ensuring no margin of error.

- The compete harmony between the robust hardware and the machining algorithm makes the whole machining processes much more stable and fast.

1.3 Classification

- Protection against electric shock: Class I(earthed)
- Installation Category: II
- Pollution Degree: 2

2. Safety Information

2.1 Introduction

Safety is everyone's responsibility. The safe use of this equipment is largely dependent upon the installer, user, operator, and maintainer. It is imperative that personnel study and become familiar with this entire manual before attempting to install, use, clean, service or adjust this equipment and any associated accessories. It is paramount that the instructions contained in this manual are fully understood and followed to enhance safety to the patient and the user/operator. It is for this reason that the following safety notices have been placed appropriately within the text of this manual to highlight safety related information or information requiring special emphasis. All user, operators, and maintainers must be familiar with and pay particular attention to all warning and cautions incorporated herein.

⚠ WARNING

"Warning" indicates the presence of a hazard that could result in severe personal injury, death or substantial property damage if ignored.

⚠ NOTE

"Note" describes information for the installation, operation, or maintenance of which is important but hazard related if ignored.

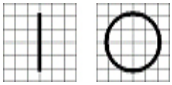
⚠ CAUTION

"Caution" indicates the presence of a hazard that could result in minor injury, or property damaged if ignored.

2.2 Safety Symbols

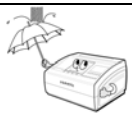
The International Electro technical Commission (IEC) has established a set of symbols for medical electronic equipment, which classify a connection or warn of any potential hazard. The classifications and symbol s are shown below.

Save these instructions

	I and O on power switch represent ON and OFF respectively.
	This symbol identifies a safety note. Ensure you understand the function of this control before using it. Control function is described in the appropriate User's or Service Manual.
	Identifies the point where the system safety ground is fastened to the chassis. Protective earth connected to conductive parts of Class I equipment for safety purposes.
	Disposal of your old appliance 1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC. 2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities. 3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health. 4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

2.3 Environment factors

Avoid the following environments for operation or storage:

	Where the equipment is exposed to water vapor. Don't operate the equipment with a wet hand.
	Where the temperature changes extremely. - Operation Temperature: 10 ~ 40°C (Humidity : 50 ~ 80%) - Storage Temperature : -20 ~ 85°C (Humidity : 50 ~ 80%)
	Where the humidity is extremely high or there is a ventilation problem.
	Where equipment is exposed to chemical material or explosive gas.
	Where the equipment is exposed to direct sunlight.
	Where it is near the heat equipment.
	Don't disassemble the product or open. We aren't responsible for it for nothing.
	Don't plug the AC power cord into the outlet before the connection between devices of the equipment is completed. This can generate the defect.

	Where the equipment is subject to excessive shocks or vibrations.
	Be careful not to be inserted dust, especially, metal
	Be careful not to close the fan located on the lateral or backside of the equipment.
	Pull out the power cord with holding the plug, not the cord.

Avoid places where the ambient temperature falls below 10℃ or exceeds 40℃ for normal operation, or below –20℃ or exceeds 85℃ for transportation and storage. Humidity should be maintained between 50% and 80% for normal operation, transportation and storage. Avoid environments where the equipment is exposed to excessive shocks or vibrations. And also the normal operation time is as following:

2.4 Safety Precaution

This equipment has been developed and tested according to safety standards as well as national and international standards. This guarantees a very high degree of safety for this device. The legislator expects us inform the user expressively about the safety aspects in dealing with the device. The correct handling of this equipment is imperative for its safe operation. Therefore, please read carefully all instructions before switching on this device. For more detailed information, please contact our Customer Service Department or one of our authorized representatives.

① This equipment must not be used (a) in an area that is in danger of explosions and (b) in the presence of flammable, explosive, or volatile solvent such as

alcohol, benzene or similar chemicals.

② Do not put or use this device in humid rooms. Humidity should be maintained between 50% and 80% for normal operation. Do not expose the device to water splashes, dripping water, or sprayed water. Do not place containers containing fluids, liquids, or gases on top of any electrical equipment or devices.

③ The equipment must be operated only by, or under direct supervision of a properly trained and qualified person.

④ The service technician of Huvitz or the technician authorized by Huvitz may only carry out modifications of this equipment.

⑤ Customer maintenance of this equipment may only be performed as stated in the User's Manual and Service Manual. Any additional maintenance may only be performed by the service technician of Huvitz or the technician authorized by Huvitz.

⑥ The manufacturer is only responsible for effects on safety, reliability, and performance of this equipment when the following requirements are fulfilled: (1) The electrical installation in the respective room corresponds to the specifications stated in this manual and (2) This equipment is used, operated, and maintained according to this manual and Service Manual.

⑦ The manufacturer is not liable for damage caused by unauthorized tampering with the device(s). Such tampering will forfeit any right to claim under warranty.

⑧ This equipment may only be used together with accessories supplied by Huvitz. If the customer makes use of other accessories, use them only if their safe usability under technical aspect has been proved and confirmed by Huvitz or the manufacturer of the accessory.

⑨ Only person who has undergone proper training and instructions are authorized to install, use, operate, and maintain this equipment.

⑩ Keep the User's Manual and Service Manual in a place easily accessible at all times for persons operating and maintaining the equipment.

⑪ Do not force cable connections. If a cable does not connect easily, be sure that the connector (plug) is appropriate for the receptacle (socket). If you cause any damage to a cable connector(s) or receptacle(s), let the damage(s) be repaired by an authorized service technician.

⑫ Please do not pull on any cable. Always hold on to the plug when disconnecting cables.

⑬ Before every operation, visually check the equipment for exterior mechanical damage(s) and for proper function.

⑭ Do not cover any ventilation grids or slits. Immediately turn off and unplug any equipment that gives off smoke, sparks, strange noises, or odors.

⑮ Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

⑯ Edger produces a noise. To prevention of the noise damage, You use the earplug

⑰ This machine might be impaired if used in a manner not specified by manufacturer and this manual.

⚠ WARNING

- Be sure that any part of human body is not interfered with the edging wheel during the operation. Otherwise, the person may be seriously hurt.

- Edging room cover should be fully closed during the lens finishing process. If the lens is broken during the process, the broken pieces of lens may cause the damage to the person. The debris may also cause the damage to the human eye.

- Be sure not to press the clamp button unless the wheel completely stops. Otherwise, the lens may be fallen and broken by the wheel, and cause the damage to the person.

- If the crack appears on the edging wheel or on the base of the product, immediately stop the operation and ask for the service. If the edging wheel is broken during the operation, the broken pieces may cause the serious hurt.

- Be sure not to edge the materials other than the spectacle lenses. Otherwise, it may deteriorate the wheel performance and cause the crack on it. If the edging wheel is broken during the operation, the broken pieces may cause the serious hurt.

- Be sure not to operate the product unless the front cover of edging body is fully closed. Otherwise, it may cause the serious hurt.

- The equipment should be properly installed and operated based on the instructions on this manual. If the power is turned on without unlocking the locking device for the carriage and feeler, it may cause the damage to the product and cause the malfunction of the product.

⚠ WARNING

- Do not disassemble the product without the proper training. It may cause the electric shock, serious hurt during the operation or cause the malfunction of the product.

- Be sure the material of lens is matched with the job options selected in the display before starting the edging mode. Otherwise, it may cause the damage to the wheel and shorten the lifetime of wheel.

- The safety beveling for glass lenses should be performed both at front and rear side. Otherwise, it will cause the damage to the human skin.

- The product should be properly installed and maintained at the horizontally leveled place. Otherwise, it may affect the normal operation of the product.

- Do not force on the stylus of frame reader. It may cause the malfunction of the product.

- Be sure that the stylus of frame reader is not interfered with the human body or other objects during the operation. Otherwise, it may cause the hurt or malfunction of the product.

- Be sure that the fingers are not caught during clamping.

- In case of detaching the lens adapter from the finished lens, use the Adapter Remover supplied as the standard accessory. Do not pull out the lens adapter with bare hands.

- Be sure that the water supply hose is not folded or interfered with other objects causing the problem of water supply. It may deteriorate the quality of lens finishing. The debris of lens may cause the damage to the respiratory organ of operator and malfunction of the product.

⚠ CAUTION

- When moving the equipment, first fix the stage and check whether the power supply is off. Then, two persons should lift the bottom of the product with both hands.

- In case of setting down the equipment, make sure not to be interfered with the obstacles. Setting down the product slowly in order to prevent the hurt of human body or damage to the product.

- When moving the equipment, make sure the locking device and the screw for the cover are properly tightened.

- In case of packaging the equipment, use the recommended packaging material and method in order to prevent the damage during the transportation.

⚠ CAUTION

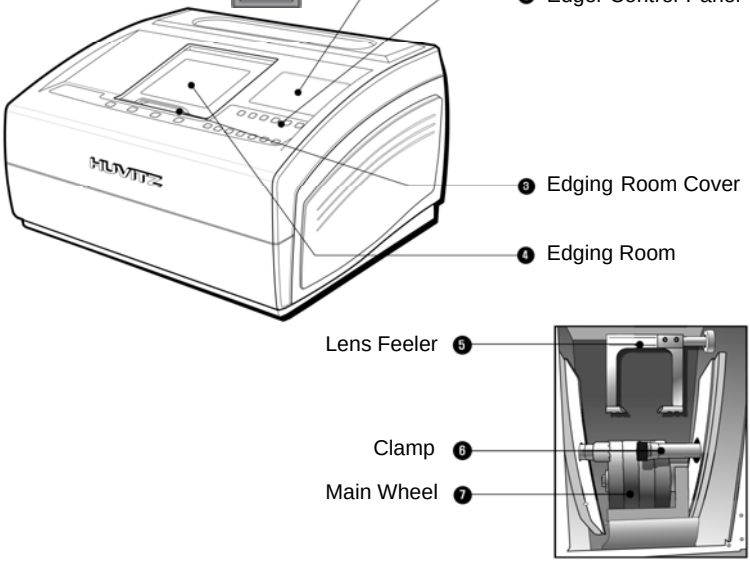
- Be sure to use the standard accessories or tools provided together with the product for the maintenance. Otherwise, it may cause the malfunction of the product.

- In case of wheel dressing, be sure to use the dressing stick fitted with each wheel. The dressing stick should be replaced in case the length becomes smaller than the size, which can be hold by hand.

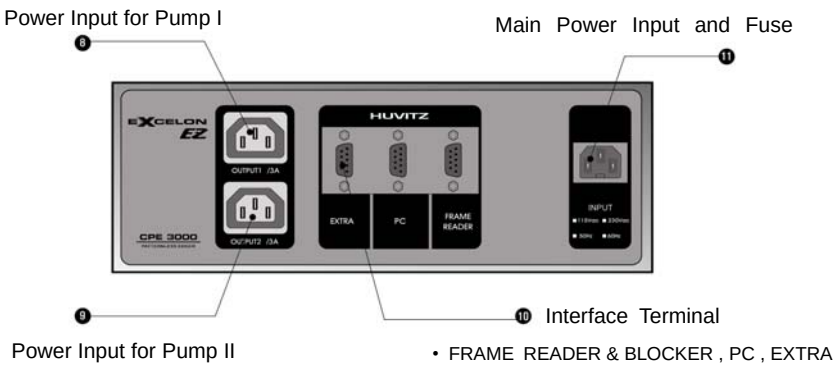
3. System Configurations

3.1 Edger

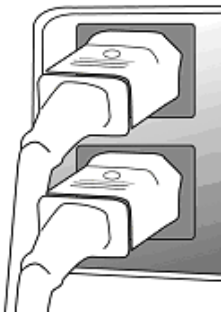
Front View

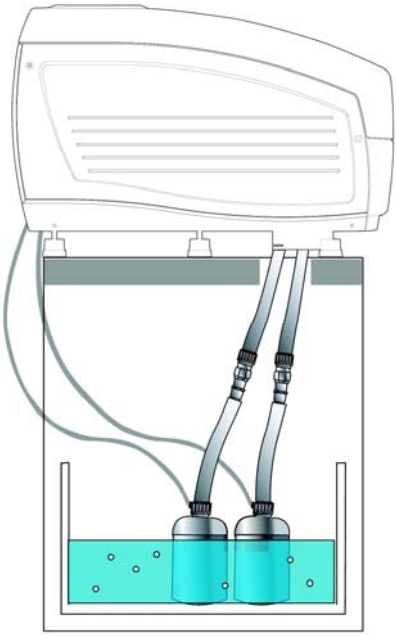


Rear View



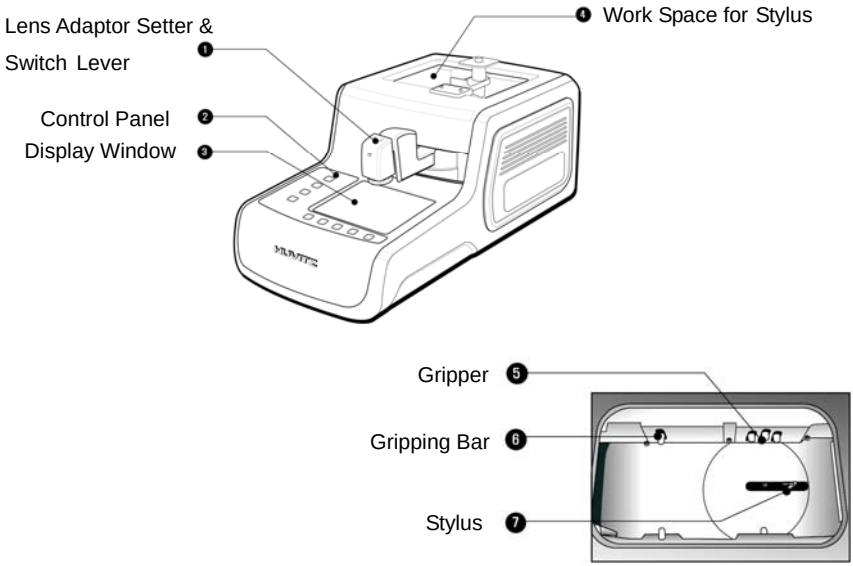
For Edging Polycarbonate



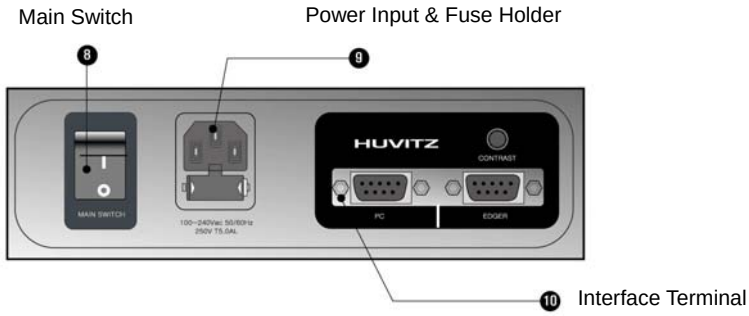


3.2 Frame Reader & Blocker

Front View



Rear View



3.3 Standard Accessory (Tool Box)

Lens Adaptor

Lens Adaptor Holder

LEAP-Ⅲ Tape

Clamp Adaptor

Lens Adaptor Remover

Fuse(250V,10A)

Standard Frame

Standard Pattern

Pattern Holder

Standard JIG for Edger

Wrench Set

Carriage-Fixing Bracket

Feeler Tips

Feeler Assembly-Fixing Bracket

Dressing Sticks

⚠ NOTE

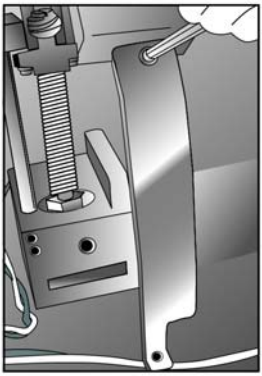
- Only Use 3M LEAP-III™ as the Block Tape in order to assure the proper axis positioning.
- In case of Super Hydrophobic Lens, use the specialized sticker in order to assure the proper axis position**.**

4. Installation Procedure

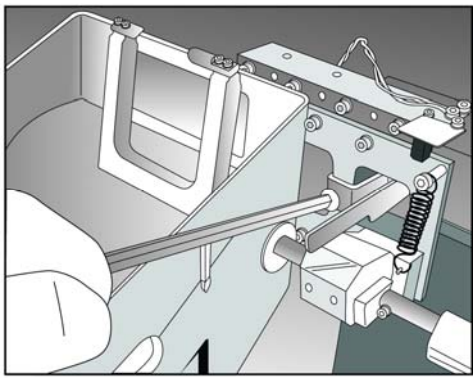
4.1 Edger

① Remove the shock-absorbing material from the packing box and pull out the Edger carefully.
② Unfasten the screw at the Edger Front Cover and lift it open.
③ Remove the Edger Left Cover.
④ Remove the Carriage Fixing Bracket.
⑤ Remove the Feeler Fixing Bracket.
⑥ Plug the Pump Power Cable into the receptacle for Pump at the back of the product.
⑦ Connect Water Supply Hose into the Pump.
⑧ Connect Water Drain Hose into Water Drain Hole and tie it with the fixing clip.
⑨ Assemble the Edger Left Cover and Edger Front Cover.
⑩ Check the Initialization.

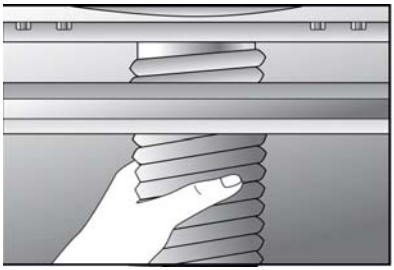
Store the Carriage Fixing Bracket and Feeler Fixing Bracket into the toolbox for the use of moving the product.



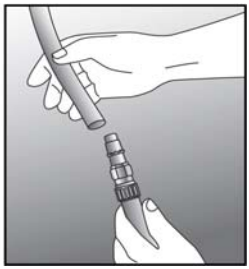
[Removing the Carriage Fixing Bracket]



[Removing the Feeler Fixing Bracket]



[Connecting the Water Drain Hose]



[Connecting the Water Supply Hose]

Fixing Clip for Water Drain Hose

⚠ NOTE

- Fill up 2/3 of the tank with water and make sure that the water supply hose is not dragged below the pump, and is not folded or interfered with other objects.
- Use the Clip to tie the Water Supply Hose properly.

4.2 Frame Reader & Blocker

① Remove the shock-absorbing material from the packing box and pull out the Frame Reader & Blocker carefully.

② Remove the shock-absorbing material from the workspace of Stylus.

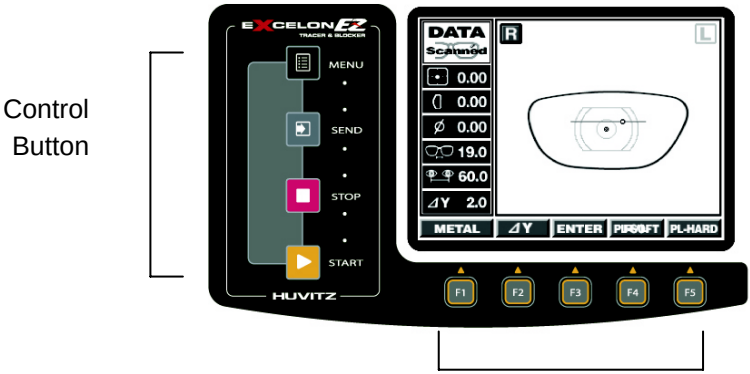
③ Plug the Power Cable into the receptacle at the back of the product and turn on the power to check the initial operation.

④ If the initial operation works properly, connect Edger and Frame Reader by using 9-pin D-sub Crossed Interface Cable.

5. Operation

5.1 Frame Reader

Control Panel



[MENU]

Configuration

[SEND]

Transmit frame(pattern) data to the edger

[STOP]

Stop tracing

[START]

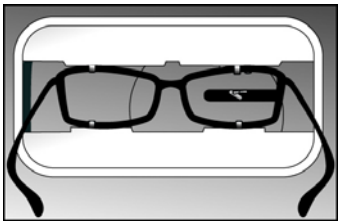
Start tracing

[Function Button]

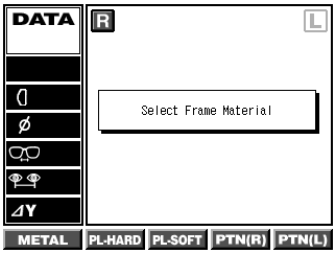
Select function

Frame Tracing

① Place the frame between the upper grippers and the lower grippers.

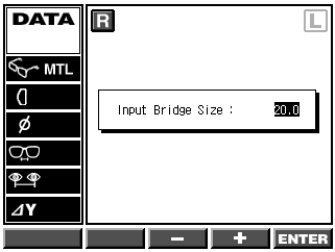


② Move the frame in order that the right frame is located at the central position in right side grippers.

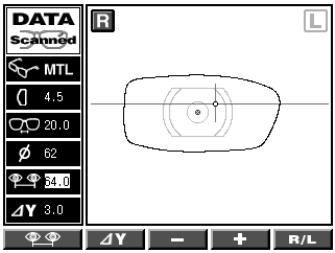


③ Press the [START] button to select the frame material(METAL, HARD PLASTIC, SOFT PLASTIC).

④ After finishing the tracing, enter bridge size.

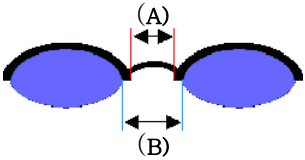


⑤ The frame will be displayed on the LCD screen and the data will be transmitted to the edger automatically.



NOTE

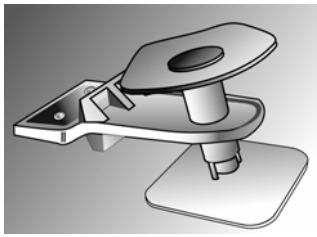
- Bridge size is mandatory input parameter.
- Measure the bridge size as (B) instead of (A). Remember that the bridge size is not from frame to frame, but from lens to lens,



- The frame data will be transmitted automatically after finishing the tracing.
- Press the [SEND] button to retransmit data manually.
- Excelon EZ tracer adapts monocular tracing method, so it can only read right side of the frame(Left side data duplicated symmetrically).
- If you want to trace left side of the frame, place the frame opposite direction. After finishing the tracing, enter bridge size value an then press [F5] button for more than 2 seconds to turn upside down the frame data.

Pattern Tracing

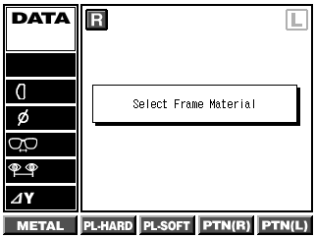
① Place pattern or demo lens to the Pattern Holder.



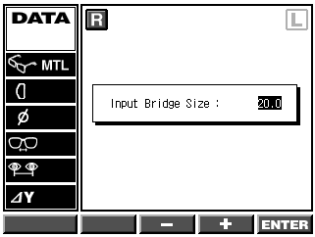
② Place Pattern Holder to the pattern holder hole of the tracer.

③ Press the [START] button to select the side of the pattern(RIGHT, LEFT).

④ After finishing tracing, enter bridge size.

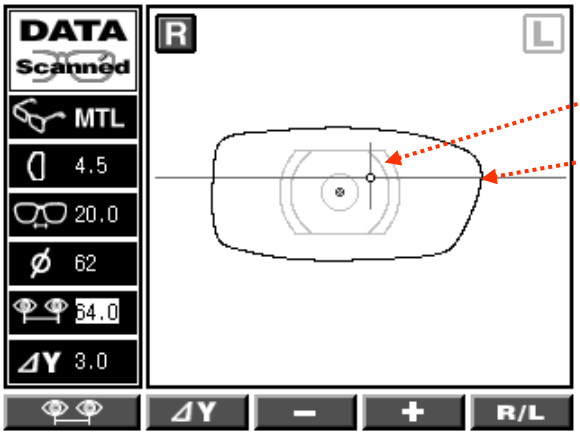


⑤ The pattern will be displayed on the LCD screen and the data will be transmitted to the edger automatically.



5.2 Blocker

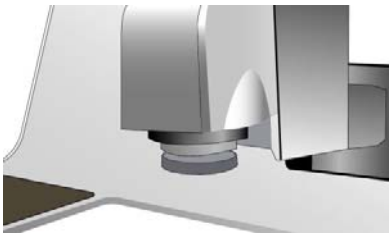
Blocker Screen



Blocking

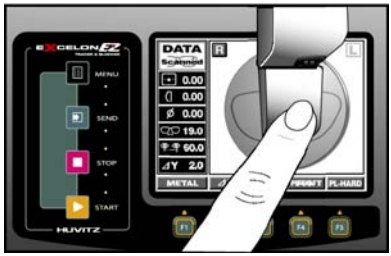
① Insert the Lens Adapter into the Lens Adapter Setter (Pay attention on the direction).

② Mark the lens at its optical center using Lensmeter.



③ Place the marked Lens over the LCD screen.

④ Move the lens according to the guideline on the LCD screen.

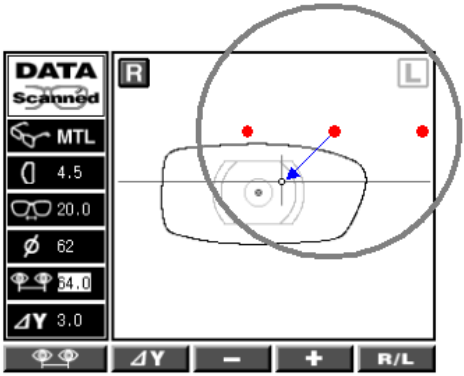


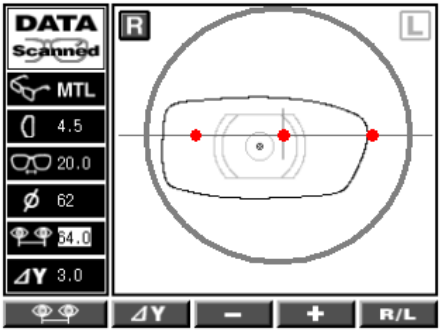
⑤ Turn the Switch Lever to place the Lens Adapter Setter over the Lens and press it to complete the blocking job.

NOTE

- Adjusting the lens position

  All marking points of the lens must located in horizontal guideline and the center of the marking point must meet the vertical guideline.



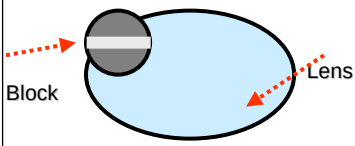
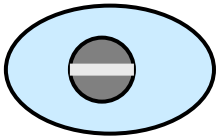
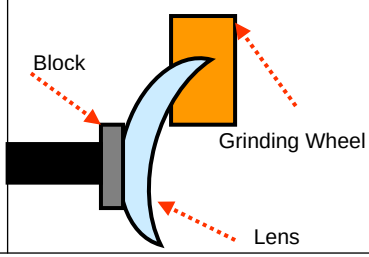
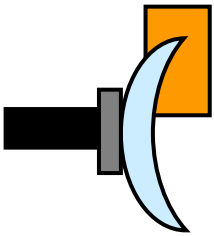


Active Blocking vs Passive Blocking

There are two methods for blocking. Active blocking is to locate the Lens Adapter to the optical center of the lens. On the other hand, Passive blocking is to locate the Lens Adapter to the center of the frame which is called 'Boxing center'.

Active blocking is much easier than Passive blocking for blocking. However, active blocking has several limitations, and also it could make the less qualified output in special cases. The following table compares active blocking and passive blocking and summarizes the advantages and disadvantages of them. As it says, if the optical center is far from the frame center, active blocking could make a little bit poor qualified output. So, in this case, passive blocking are recommended.

Comparison with active blocking and passtive blocking

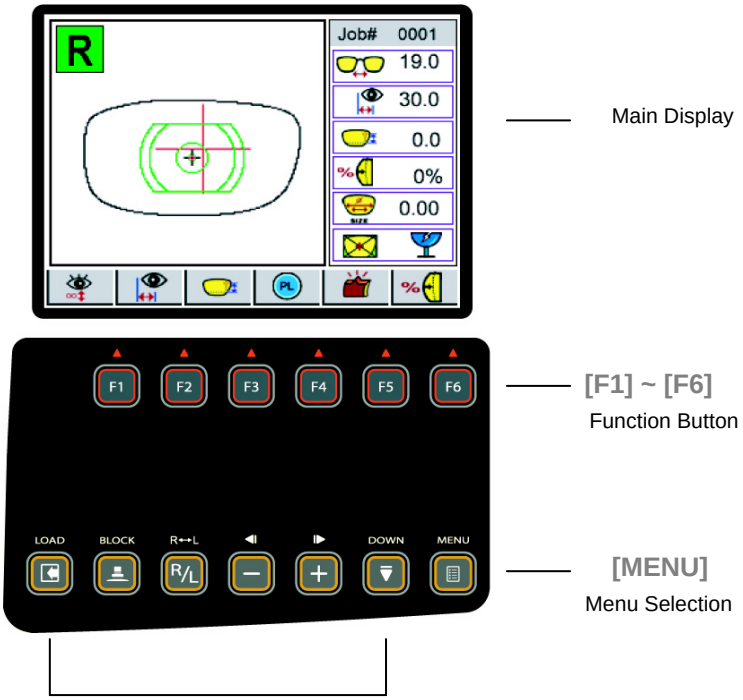
	Active Blocking	Passive Blocking
Blocking	Optical Center of Lens	Geometrical Center of Frame
User Convenience	Just following the Marking Spot of Lensmeter	Cannot using the Marking Spot of Lensmeter.
Minimum Edging Size	There can be additional limitations because of PD, OH(=Optical Height) 	No additional limitation 
Edging Quality of Beveling	Eccentric Edging 	Centric Edging 

NOTE

- Excelon EZ adopts Passive blocking as a default.
- According to the blocking method, Excelon EZ calculates blocking position and display guideline on the LCD screen automatically.
- User only place the lens to the guideline on the LCD screen regardless of the blocking method.
- Do not force too much on the Switch Lever for blocking. Otherwise, it may scratch or damage the Lens or LCD.

5.3 Edger

Main Display & Control Panel



[LOAD] : Load data
[BLOCK] : Transmit data to the Blocker
[R/L] : Toggle lens side
[-] : Decrease value
[+] : Increase value
[DOWN] : Select next item

Edging Control Panel

[CLAMP]	[START]	[STOP]	[RETOUCH]
Clamping	Start Edging Process	Stop Edging Process	Start Retouching

NOTE

- [-]/[+] button used as Lens Position button while edging.
- Be sure that Lens Position Button only works during Roughing process. It is useful to adjust the lens position if the lens exceeds the wheel range because of the thickness.

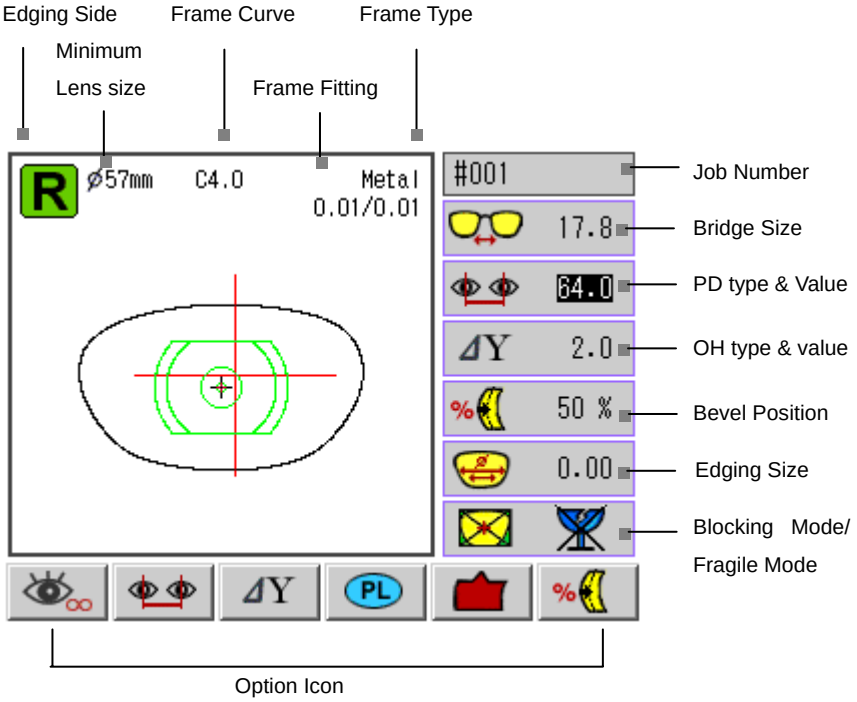
5.4 Edging Process

5.4.1 Main Screen

All the processes can be completed on one-page display.

Center of the main screen shows frame shape in actual measurement. Frame information displayed on top of the screen. And right side of screen shows layout option values. Bottom buttons of the screen is for changing options.

Press the function button([F1]~[F6]) to change the layout or edging option. And value of the option can be changed by [-] / [+] button.



5.4.2 Layout & Edging Options

Layout & Edging options displayed in the bottom button area. Most frequently used options are located in main option bar and remains are located in sub option bar.
Option bar can be toggled by [MENU] button(Main <-> Sub).
To change the option, press the function([F1]~[F6]) button.

Main Options

[F1] [F2] [F3] [F4] [F5] [F6]

[F1]

Far vision

Near vision(Bi-focal)

Near vision (Bi-focal blend lens)

[F2]

Binocular PD

Monocular PD

[F3]

FPD-based OH (Delta-Y)

Box OH

Mix OH

[F4]

Plastic

Polycarbonate

Hi-index

Glass

Trivex

[F5]

Beveling

Flat edging + Polishing

Flat edging

[F6]

Front side (%)

Front side (mm)

Rear side (mm)

Basecurve

Sub Options

[F1] [F2] [F3] [F4] [F5] [F6]

[F1]

Boxing Center

Optical Center

[F2]

Normal Edging

Fragile Mode

[F3] Clamp Pressure

Min Low Normal High Max

[F4]

Edging Size

Retouch Size

[F5] Internal Data

Square Ellipse Sample Frame Circle Pentagon

[F6]

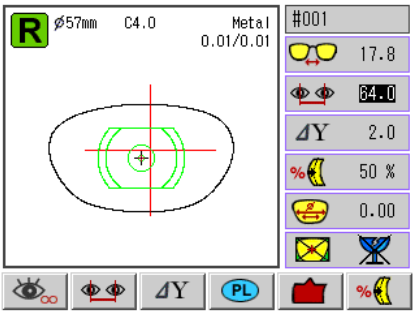
Near vision enlargement Vertical enlargement Horizontal enlargement

Diameter enlargement Axis rotation

5.4.3 Starting a New Job & Loading a Job

Starting a New Job

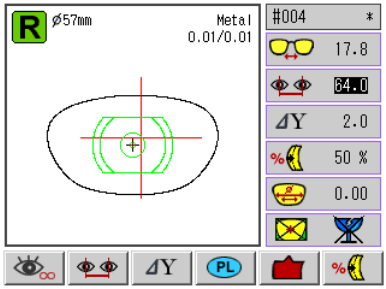
When the edger receives data from the tracer, new job is started. Job number assigned in regular sequence and displayed on top of the LCD screen(#001). Frame data displayed on the center of the screen in actual measurement. Layout and edging option applied from the user-defined configuration value in Menu mode.



Loading a Job

In the middle of designing lens if the edger receives new data from the tracer, new data saved in the internal memory temporalily. And * icon displayed on the LCD screen(#004 *). Now new data is in the waiting state.

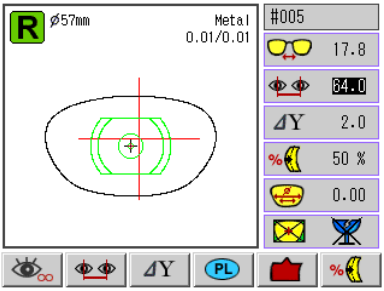
Press the [LOAD] button to load new data from the memory.



Example)

Current job is #004.

New data received and saved in the internal memory.



Press [Load] button to load new data.

New data loaded and job number #005 assigned.

NOTE

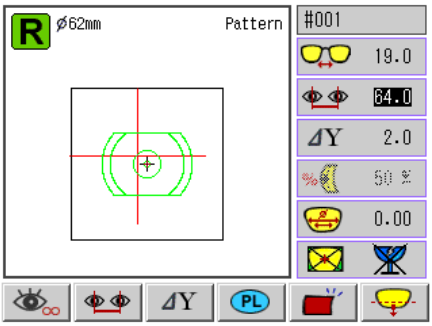
- In the middle of edging process, edger didn't receive new data from the tracer for preventing a falling-off in edging quality.
- Excelon EZ couldn't handle more than one job. If new job started, the previous job deleted permanantly.
- If many data received, Excelon EZ saves only one data which received late.

5.4.4 Loading an Internal Data

Internal data used for testing the edger. Total 5 data(Square, Ellipse, Sample frame, Circle, Pentagon) are saved in the memory

Press the [MENU] button to change option bar.

Press the [F5] button to select internal data.



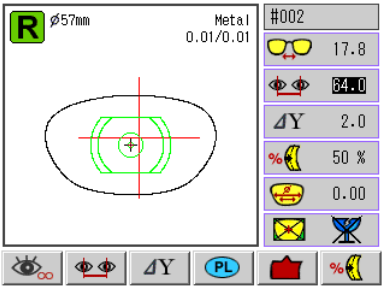
Press the [LOAD] button to load internal data.

If the data loaded, job number assigned like normal tracing data and new job started.

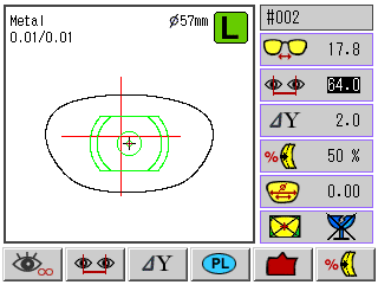
5.4.5 Toggle Lens Side

Press the [R/L] button to toggle lens side.

Right Side



Left Side



The side icon will be changed if the edging process is finished.

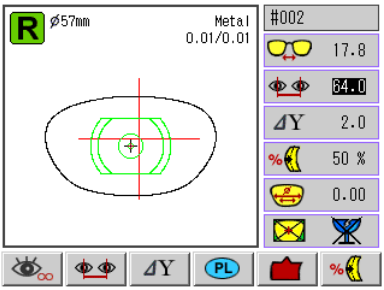
Before edging	Edging completed
R	R

Exchange R/L data

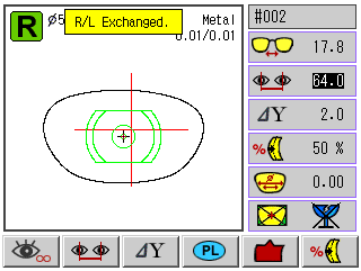
When you trace pattern, if you select wrong lens side you can exchange it easily.

If you press the [R/L] button for 2 seconds, the following message will be shown and then the traced pattern side will be switched.

Before



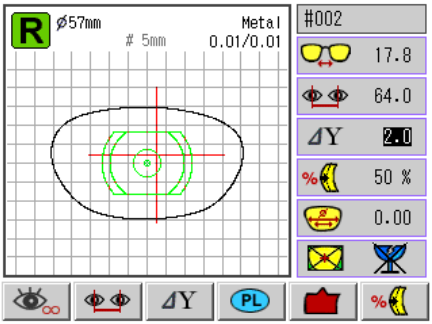
After



5.4.6 Layout Grid

Press the [MENU] button and the [DOWN] button together to display grids. Using this grid ruler, you can identify the dimension of each elements such as the size of frame, the distance from the far vision center to the near vision center and the size of near vision area and so on. And also you can change the interval of the grid by pressing the [-] button or [+] button with [MENU] button pressed.

.

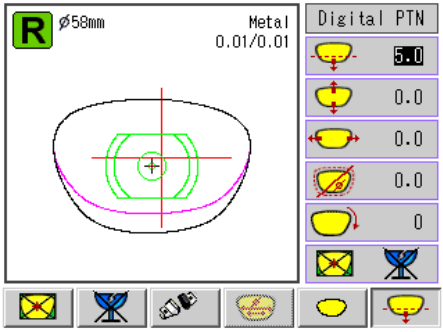


NOTE

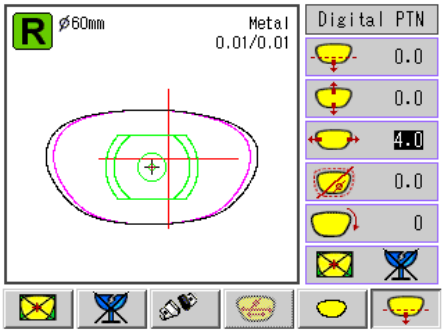
- Grid interval shown on top of the frame screen.
- The distance between grids may different from actual distance because of LCD resolution.

5.4.7 Digital Pattern

Digital Pattern modifies the lens shape in left/right, top/bottom as well as circumference and optimizes the fitting challenge for rimless.

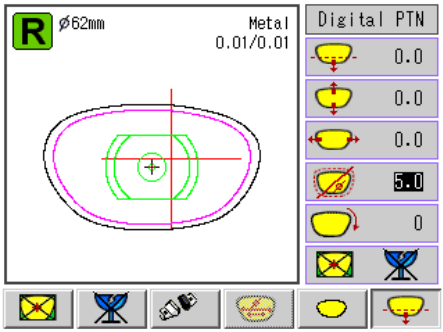


Press the [MENU] button to change option bar.



Press the [F6] button to select digital pattern.

Press the [-] button or [+] button to change value.



The digital pattern applied frame shown after a few seconds(User can change the delay time in the Menu mode).

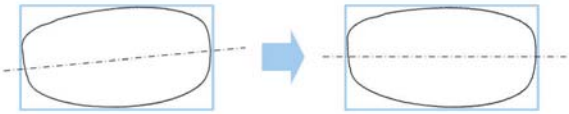
New frame shape displayed with black color and original frame shape displayed with light red color.

NOTE

- For the half-framed lens or the rimless lens, the digital pattern provides the convenient reformation. The redesign of the frame shape could be done easily using the digital pattern.

- For the bi-focal lens or the progressive, the digital pattern makes the near vision area included within the frame. Sometimes too small frame shape might cut out the near vision area. In this case, the digital pattern provides the enlargement of the frame shape.

- If you get the tracing data with tilted axis of Pattern (Demo Lens) or if you want to change the axis of rimless frame, the axis rotation ( ) of Digital Pattern will be very much convenient for the Layout Job.

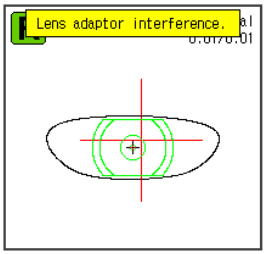


5.4.8 Safety Check

The following two safety checking is executed before start edging process.

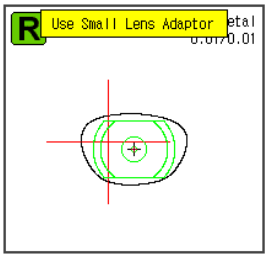
- Lens Adapter interference
- PD eccentricity (for optical center mode)

If there is any problem while executing the safety check, warning messages will be displayed. According to the guides of these warning message, you can correct easily the problem. The followings are the meaning and the solution guide of these warning messages.



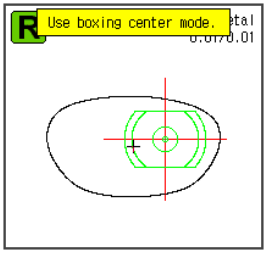
Lens Adaptor interference

Lens is smaller than the lens adaptor. Use digital pattern to enlarge frame shape.



Use Small Lens Adaptor

Lens is smaller than the normal lens adaptor. Use small lens adaptor to start Edging process.
(This warning message displayed when user turn on the "Use Small Lens Adaptor" switch in the Menu mode)



Use Boxing Center Mode (PD eccentricity)

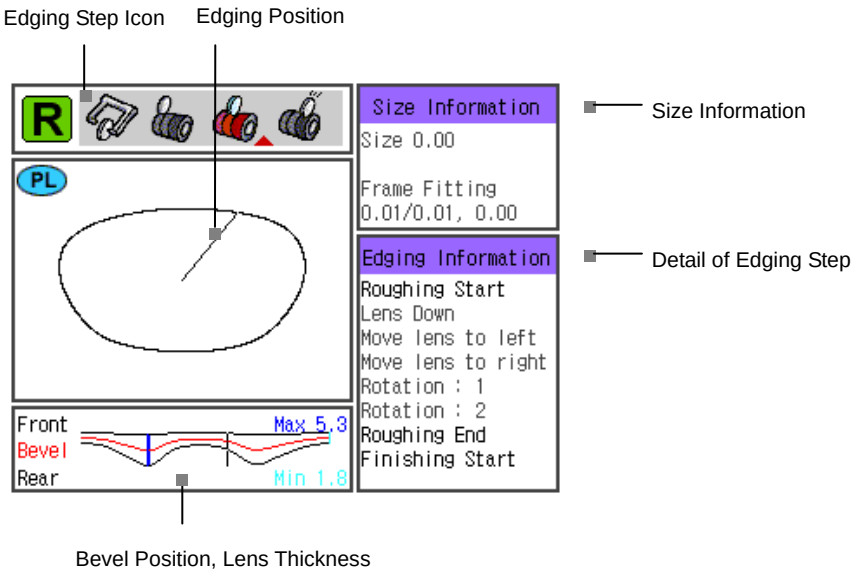
This message displayed only in optical center mode when blocking position is a little bit one sided.
To improve edging quality, change blocking mode to boxing center.

5.4.9 Start Edging Process

After selecting all the options, press the [START] button to execute the lens edging process. Edging progress screen will be displayed on LCD for the convenience.

On the edging progress screen, current edging step, detail of the edging step, edging position, bevel position and lens thickness displayed in real-time.

Press [STOP] button to cancel the lens edging process.

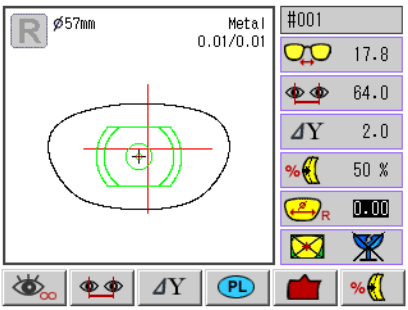


CAUTION

- To prevent the distortion of axis, you should put stickers for blocking of hydrophobic lenses. Stickers are provided by lens manufacturers. Otherwise, we do not guarantee the quality of the stickers.

5.4.10 Retouching

If you need the size adjustment after finishing the lens edging, change the retouch size value. Be sure that retouch will be only executed after finishing the lens edging.



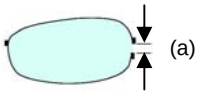
After finshing the lens edging, retouch size icon selected automatically.

Use [-]/[+] buttons to adjust retouch size value.

And then press the [RETOUCH] button to start retouching(Do not confuse [RETOUCH] button with [START] button).

NOTE

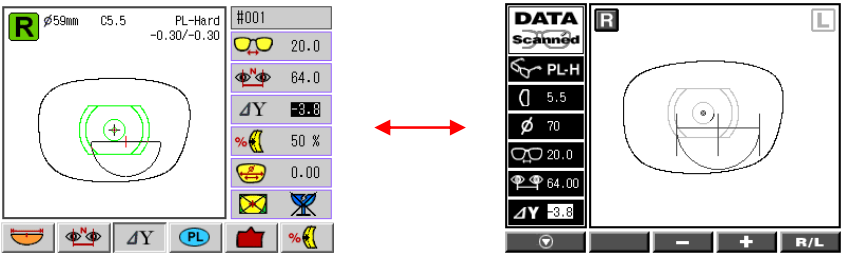
- Be sure not to remove the lens adapter to retouching.
- In case the operator made an error not to activate polishing, the operator can execute polishing by way of pressing the polishing button.
- If the operator change the options other than polishing, retouch feature will be disabled.
- The recommended retouch size will be 1/3 of the length shown as (a).



5.4.11 Data Sync

To prevent discrepancy of frame information between the edger and the frame reader, frame information is synchronized in real-time.

If the operator changes a option in the edger, the same option in the tracer changed automatically and vice versa.



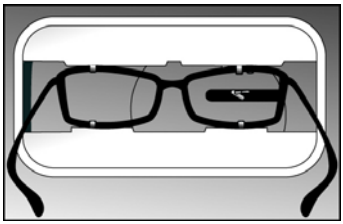
The oprator changes Delta-Y value to -3.8 in the edger, then Delta-Y value in the tracer changed to -3.8 automatically.

NOTE

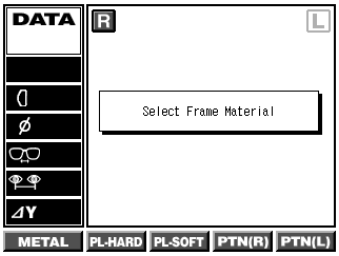
- If the operator change the frame shape(for example digital pattern), the operator must transmit changed data manually.
- In the edger, press the [BLOCK] button to transmit data to the tracer when digital pattern used or pattern data exchanged.
- In the tracer, press the [SEND] button to transmit data to the edger when pattern data exchanged.

5.4.12 Summary of the Edging Process

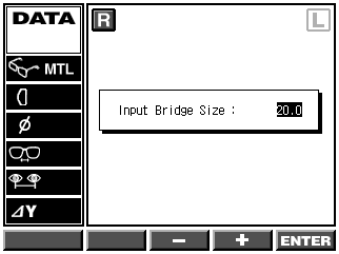
Tracing (Frame Reader)



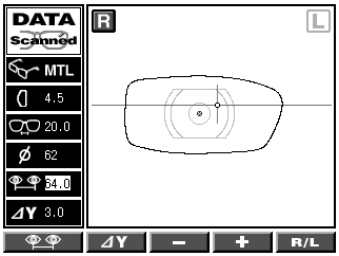
① Place the frame between the upper grippers and the lower grippers.



② Press the [START] button and then select the frame material.

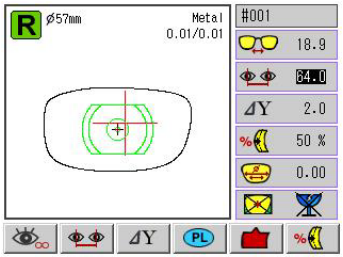


③ After finishing the tracing, enter bridge size.

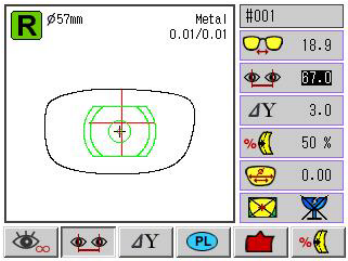


④ Check the frame shape and then setup PD and OH value(frame information trasmited to the edger automatically).

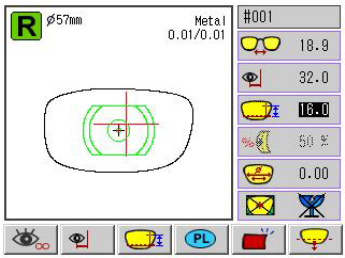
Layout (Edger)



⑤ Start new job with the data received from the tracer.

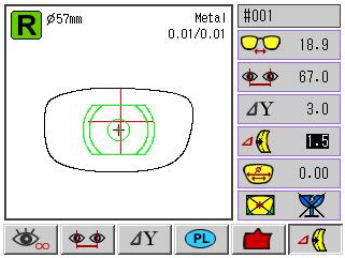


⑥ Change the PD and OH values if needed.



⑦ Press the [F4] button to select lens material(plastic, polycarbonate, hi-index, glass, trivex).

⑧ Press the [F5] button to select edging method(beveling, flat edging with polishing, flat edging).



⑨ In case of beveling, Press the [F6] button to select bevel position.

⑩ After finishing all actions, compare frame information of the edger to the frame reader & blocker.

Operation Tips

- According to the Edging Options, Beveling position can be selected independently.

☞

Ratio (%) from the Front side of the lens

☞

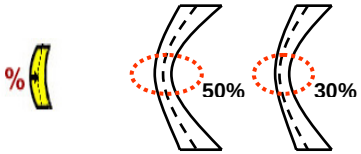
Distance (mm) from the Front side of the lens

☞

Distance (mm) from the Rear side of the lens

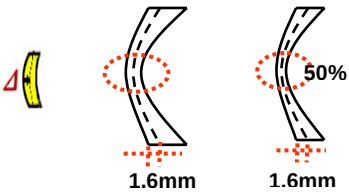
☞ Adjust the position according to the Lens Base Curve and the Minimum Thickness (0~10)

- The value of the edging options affects the final output as followings :



[Ratio(%) mode from the front side]

- Like the above picture, if the operator use ratio(%) mode from the Front side about a so thin lens, the machining of the thinnest part could be dangerous.



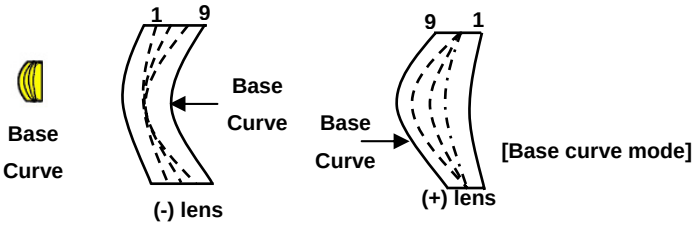
[Distance(mm) mode from the front side]

- Using the distance(mm) mode from the front side, the operator can designate the specific distance, However, if the thickness of the thin area is less than the

double of the designated value, the machine internally forces it to be machined by the 50% of the thickness at the thin position.

⚠ NOTE

- Frame Material, Lens Material and Lens Thickness may affect the quality of Lens Fitting. If needed, execute the Size Adjustment in advance. Frequently used Adjustment Value can be stored at "Frame Fitting" in "size Adjustment". (Refer to section 6.3.1)



- In the base curve mode, base curves of (+) lenses and (-) lenses exist the opposite side of each of them. In this mode, the bevel or grooving line always passes the mid of the thinnest area which is located at the midst zone of (-) lenses and is located at the edged zone of (+) lens. And much bigger position value makes the curve closer to the base curve.

- Be sure to carry out the Edging Process in Fragile Mode in case the lens may be broken or the axis may be tilted during the edging process.

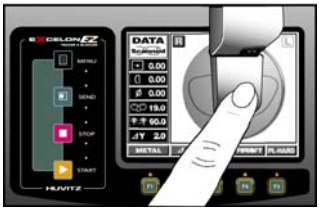
- Polishing is not available for the Glass Lens. Be sure the material of lens is matched with the job options selected in the display before starting Edging Process.

- Be sure to use the new Tape or Sticker and erase the wet from the Lens surface.

Blocking (Blocker)

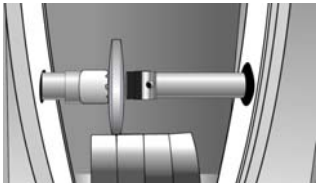
⑪ Mark the lens at its optical center using Lensmeter.

⑫ Place the marked lens over the LCD screen. And then adjust lens position according to the guideline on the LCD screen.

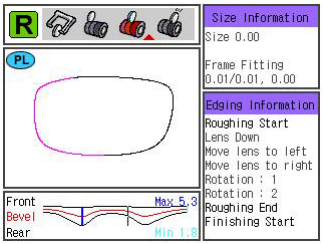


⑬ Turn the Switch Lever to place the Lens Adapter Setter over the lens and press it to complete the blocking job.

Edging (Edger)



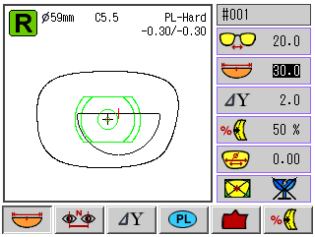
⑭ Place the blocked lens to the edging room.



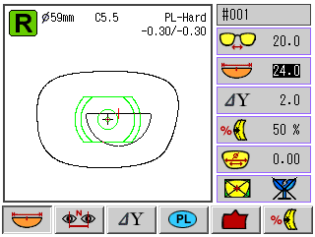
⑮ Press the [START] button to start Edging Process.

5.4.13 Using Bi-focal Lens

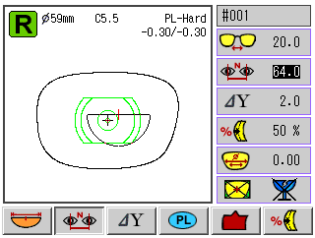
Layout (Edger)



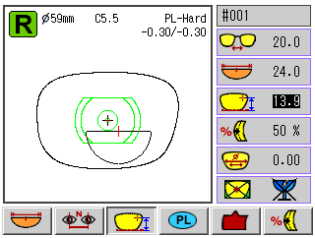
① Press the [F1] button to change Bi-focal mode.



② Adjust near vision area size.

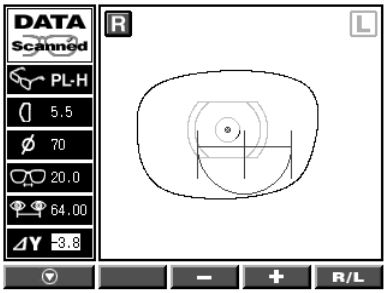


③ Press the [F2] button until the PD type option icon changed to near PD and then change PD value.

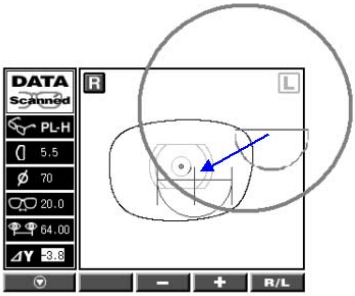


④ Press the [F3] button to change OH type and then change the OH value.

Blocking (Blocker)

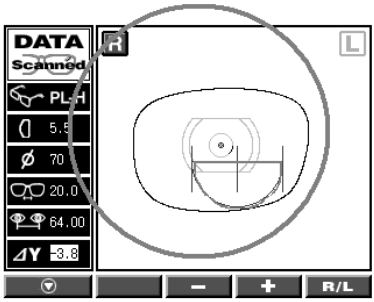


⑤ Bi-focal guidline displayed on the frame reader LCD screen,



⑥ Place the Bi-focal lens over the LCD screen.

⑦ Adjust near vision position according to the guidline.

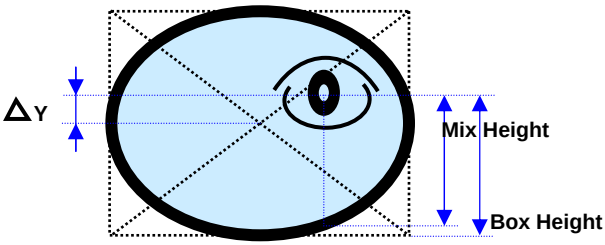


⑧ Press Lens Setter to blocking.

NOTE

- In case of executing the options for Bi-Focal(Near Vision) and Bland Lens (Near Vision) , Near Vision Shape will be displayed on the LCD screen. If you input the diameter, you can see the frame shape similar to the actual lens shape and check the interference.

- The exact meaning of the mix height and the box height is as following:

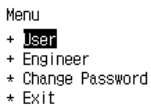


- It is so important to measure the optical height of the patient precisely when edging a progressive lens. Sometimes, too short optical height might cut out the near vision area.

6. User Defined Options

6.1 Configuration of Frame Reader & Blocker

Press the [MENU] button for 2 seconds to enter menu mode.



Menu Icon

+ : sub menu item

* : excutable item

. : input item

[F1] [F2] [F3] [F4] [F5]

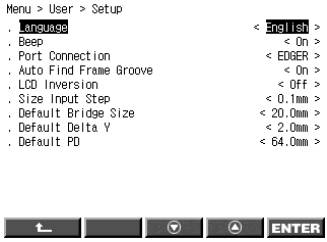
[F1] Move up level

[F3] Move cursor down

[F4] Move cursor up

[F5] Execute selected item or change value

6.1.1 Basic configuration

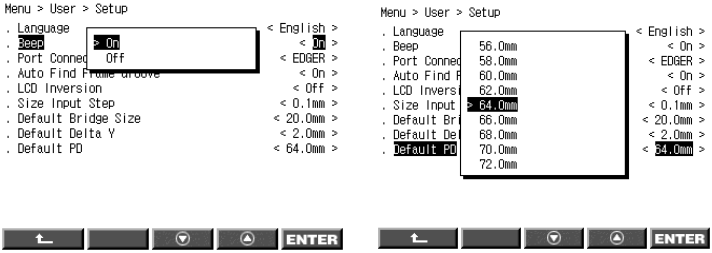


- Language : choose lanaguage
- beep : use beep or not

- Auto find frame groove : use automatic groove finding feature or not
- reverse screen : black <-> white
- minimum input step : setup step value
- Bridge size : default value of bridge size (mm)
- Default Delta-Y : default value of Delta-Y (mm)
- Default PD : default value of PD (mm)

⚠ NOTE

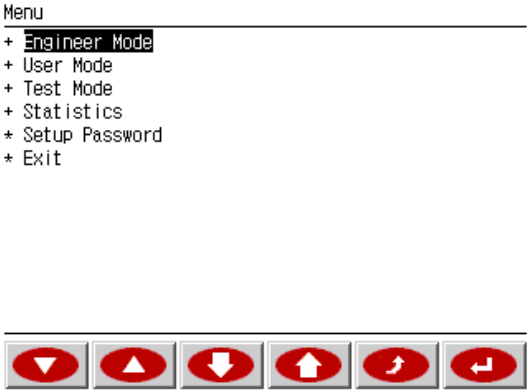
- How to change the value



- Select menu item to change and then press the [F5] button.
- Select new value(Press the [F3] or [F4] button).
- And then press the [F5] button to enter new value

6.2 Configuration of Edger

Press the [MENU] button for 2 seconds to enter menu mode.



Menu Icon

+ : sub menu item

* : excutable item

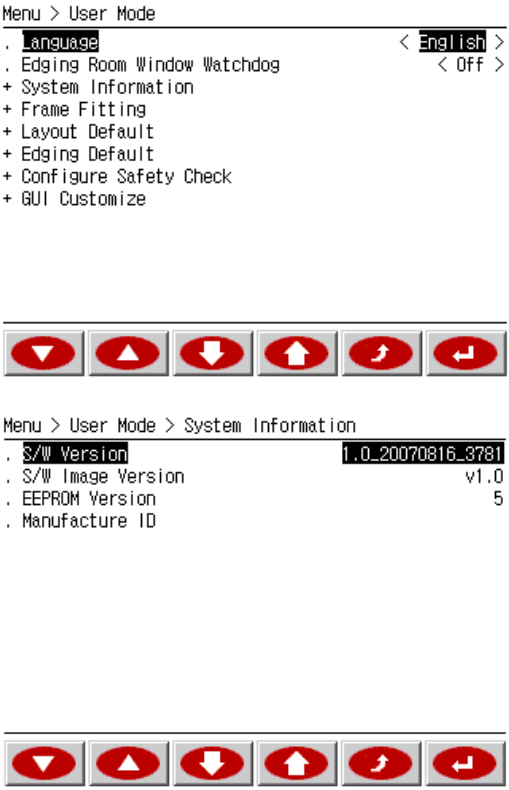
o : group item

. : input item

[F1]	[F2]	[F3]	[F4]	[F5]	[F6]

[F1]		Move cursor down
[F2]		Move cursor up
[F3]		Page down
[F4]		Page up
[F5]		Move up level
[F6]		Show sub menu items or execute selected item

6.2.1 System information & Basic Configuration



- Language : choose lanaguage
- Edging room window watchdog : setup response type of edging room window open

  Off : no reaction.

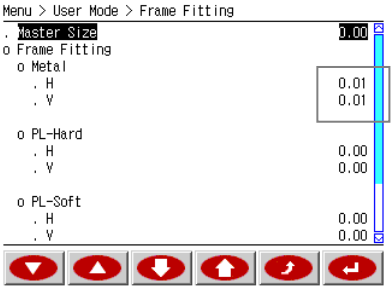
  Warning Message : show warning message

  Stop : stop the edging process

  Warning + stop : show warning messages and stop the edging process

6.2.2 Frame Fitting

You can adjust fitting size by frame type.



- Master Size is applied to a final output regardless of lens material.
- Frame fitting is applied to each of lens material.

Setup procedure

① Trace the frame data with Frame Reader.

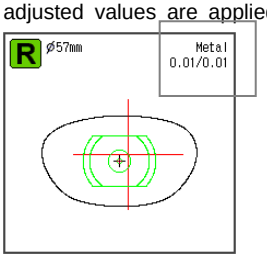
② Execute the Edging Process with Mid-Index Lens (low diopter lens preferred) and carry out the Fitting with the edged lens.

③ In case the edged lens is bigger than the frame, adjust the value to '-' (minus). In case the edged lens is smaller than the frame, adjust the value to '+' (plus). (Based on the Lens Diameter)

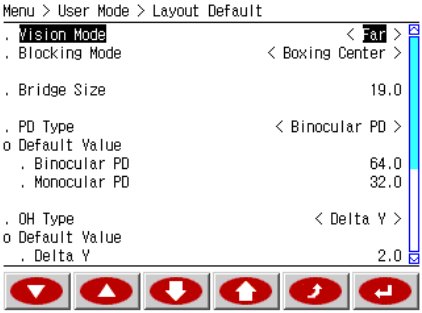
☞ Using the Master Size Adjustment, the operator can set up the adjustment value for all frame materials simultaneously.

☞ In case the frame tracing is executed after selecting the frame material in the Menu of Frame Reader, the recommended value of fitting adjustment will be displayed on the screen(top right).

☞ Remember that these adjusted values are applied in diameter.

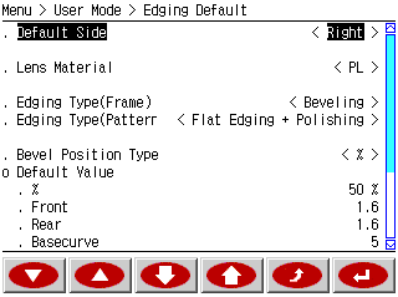


6.2.3 Layout Default



- Vision Mode :
  - Far vision (Single focus)
  - Near vision (Bi-focal)
  - Near vision (Bi-focal blending Lens)
- Blocking Mode : Default blocking method
  - Boxing Center (Passive Blocking)
  - Optical Center (Active Blocking)
- Bridge size : Default bridge size value
- PD type : Default PD type
  - Binocular PD
  - Monocular PD
- PD value : Default PD value
- OH type : Choose the initial style for OH(=Optical Height)
  - Delta Y : OH based on FPD(=Frame Pupil Distance)
  - Boxed Height : OH based on the lowest point of Frame
  - Mixed Height : OH based on the intersection with the frame and the vertical line of the optical center
- OH value : Default OH value
- Bi-focal lens size : Default value of bi-focal lens size
- Bi-focal Offset : Default value of blocking position for bi-focal lens

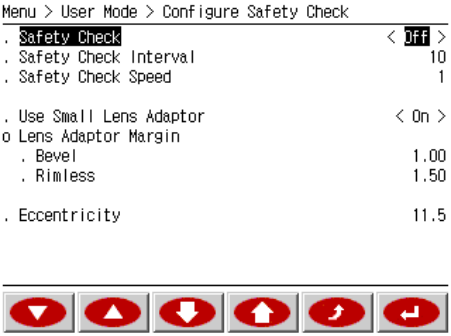
6.2.4 Edging Default



- Default side : Default edging side (Right or Left)
- Lens material : Default lens material
  - PL Plastic
  - PC Polycarbonate
  - HI Hi-Index
  - GL Glass
  - TRI Trivex
- Edging type : Default edging type
  - Beveling
  - Flat Edging with Polishing
  - Flat Edging
- Bevel position type : Default bevel position
  - % (Ratio from the front side of lens)
  - FRONT mm (Distance from the front side of the lens)
  - REAR mm (Distance from the rear side of the lens)
  - Base curve (Adjust the position according to the lens base curve)
- Bevel position value : default position value for each of bevel position type

6.2.5 Configure Safety Check Parameters

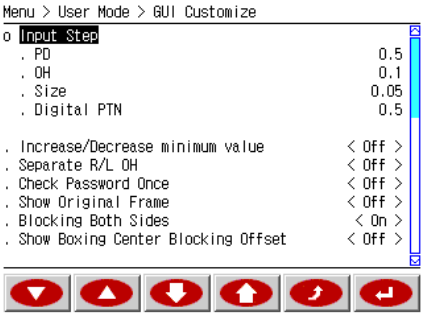
Setup the parameter of the safety check feature.


Menu > User Mode > Configure Safety Check
. Safety Check < Off >
. Safety Check Interval 10
. Safety Check Speed 1
. Use Small Lens Adaptor < On >
o Lens Adaptor Margin
. Bevel 1.00
. Rimless 1.50
. Eccentricity 11.5

- Safety check : use safety check feature or not
- Safety check interval : default value of test interval (seconds)
- Safety check speed : setup test speed (leave as default value, default value is 1)
- Use small lens adaptor : use small lens adaptor or not
- Lens adaptor margin (bevel) : margin parameter for bevel edging (mm)
- Lens adaptor margin (rimless) : margin parameter for flat edging (mm)
- Eccentricity : standard value of determining eccentricity (mm)

6.2.6 GUI Customize

Setup the interface of the GUI screen in detail.


Menu > User Mode > GUI Customize
o Input Step
. PD 0.5
. OH 0.1
. Size 0.05
. Digital PTN 0.5
. Increase/Decrease minimum value < Off >
. Separate R/L OH < Off >
. Check Password Once < Off >
. Show Original Frame < Off >
. Blocking Both Sides < On >
. Show Boxing Center Blocking Offset < Off >

- Input step : setup step value (mm)
- Increase/Decrease minimum value : use minimum step value or not
- Separate R/L OH : apply OH value only to selected side or not
- Check password once : check password once or not
- Show original frame : show original frame shape when digitial pattern used
- Blocking both sides : sending both sides data when blocking
- Show boxing center blocking offset : display blocking offset for Excelon manual blocker
- Disable blocking warning message : didn't show blocking warning message
- Refresh screen immediately : screen redrawn whenever layout option changed
- Screen refresh delay : default delay time of screen refresh (seconds)
- Digital pattern delay time : default delay time of digital pattern feature (seconds)
- Wheel check interval(minutes) : default value of test of wheel counter (minutes)
- Screen saver wait(minutes) : default value of screen saver interval (minutes)

- Check input value : use value range check feature or not
- Edger<->Tracer job sync : use job sync feature or not
- Job sync interval(seconds) : default interval value of job sync feature (seconds)
- Disable down key at last menu item : Lock [DOWN] key at last menu item
- Show menu input range : show range of the menu item value
- Show menu input step : show step value of the menu item
- Max digital pattern width : Maximum width of digital-patterned lens (mm)
- Max digital pattern height : Maximum height of digital-patterned lens (mm)
- Use beep : use beep or not
- Beep settings : setup beep options in detail
- Screen adjustment : adjustment LCD screen position

⚠ NOTE

- There are many options in the edger menu not described in this manual.
- Be sure to only change options described in this manual.
- Others, it may cause malfunction of the product.

7. System Maintenance

7.1 Frame Reader & Blocker Calibration

Execute Automatic Calibration for Frame Reader & Blocker in the followings.

- The traced data seems to show the error in the Size and Axis
- The Frame Reader seems not to work properly
- Blocking position seems to incorrect

Frame Calibration

Procedures for frame calibration

① Place standard frame to tracer.

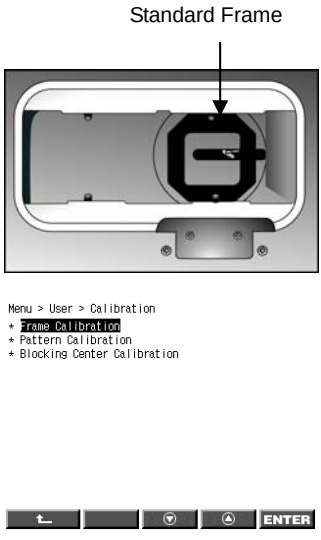
② Enter menu mode by pressing the [MENU] button for 2 seconds.

③ Select "User Mode".

④ Select "Calibration".

⑤ Select "Frame Calibration".

⑥ Then follow instructions displayed on the LCD.



NOTE

- The result of Automatic Calibration will be automatically memorized.
- Be sure to check the related information before executing the calibration work because you cannot get back the machine to the previous status. .
- During the calibration, [STOP] button stops and aborts processing job.

Pattern Calibration

Procedures for pattern calibration

① Place standard pattern to tracer.

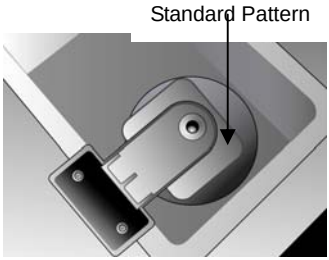
② Enter menu mode by pressing the [MENU] button for 2 seconds.

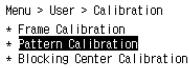
③ Select "User Mode".

⑦ Select "Calibration".

④ Select "Patter Calibration".

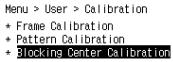
⑤ Then follow instructions displayed on the LCD.





Blocking Position Calibration

Procedures for blocking position calibration

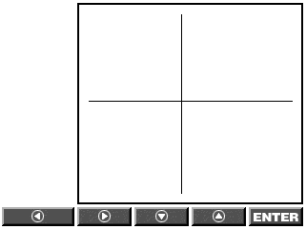


① Enter menu mode by pressing the [MENU] button for 2 seconds.

② Select "User Mode".

③ Select "Calibration".

④ Select "Blocking Position Calibration".



⑤ Press the function([F1]~[F5]) button to move the cross line.

⑥ The cross line must located in center of the blocker.

NOTE

- Place lens adaptor with LEAP tape to the lens adaptor setter and then turn the switch lever to place the lens adaptor setter over the center of the LCD and the push down the switch lever.

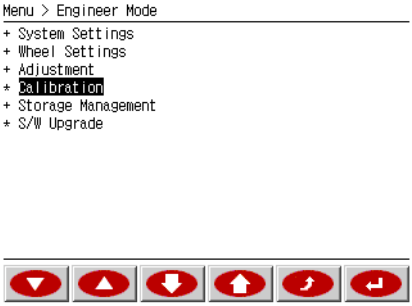
- Through the small hole of the lens adaptor, you can easily adjust cross line to the center position of the blocker.

7.2 Edger Calibration

Two kinds of calibration can be done with standard edging JIG. Those are Size Calibration and Feeler Calibration.

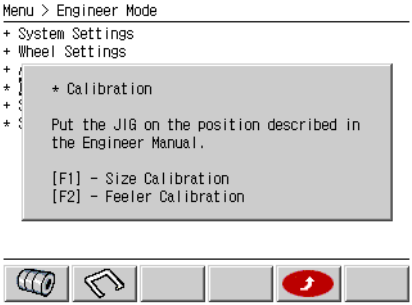
Follow the below instruction to go into Calibration display.

① Enter menu mode by pressing the [MENU] button for 2 seconds.



② Select "Engineer Mode".

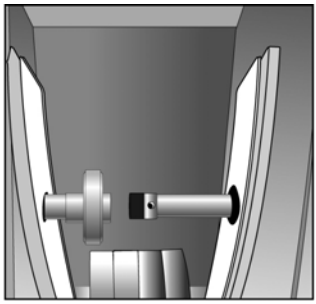
③ Select "Calibration".


Menu > Engineer Mode
+ System Settings
+ Wheel Settings
* Calibration
Put the JIG on the position described in the Engineer Manual.
[F1] - Size Calibration
[F2] - Feeler Calibration

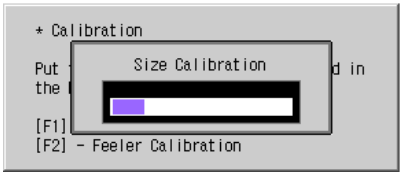
Size Calibration

Procedures for size calibration

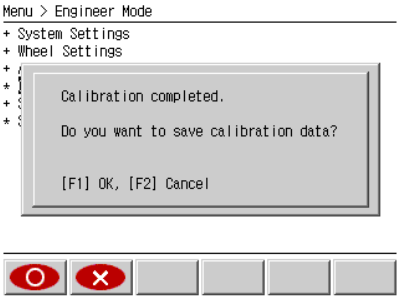
① Replace Lens adaptor holder with Standard JIG.



② Press the [F1] button to start size calibration.



③ After calibration, press the [F1] button to save or [F2] button to discard.



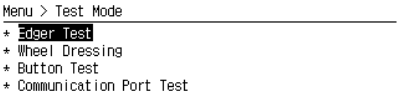
Feeler Calibration

Same as above size calibration procedure except step ②.

Press the [F2] button to start feeler calibration.

7.3 Edger Diagnosis

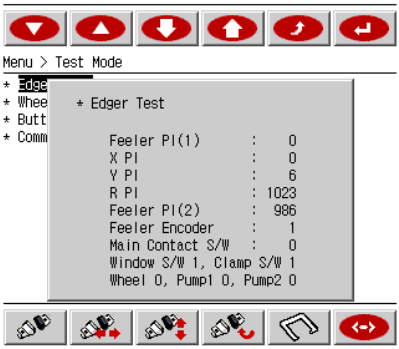
④ Enter menu mode by pressing the [MENU] button for 2 seconds.



⑤ Select "Test Mode".

⑥ Select "Edger Test".

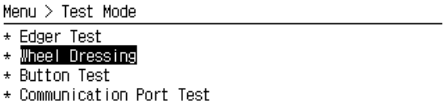
⑦ Press the function button([F1]~[F6]) to test.


Menu > Test Mode
* Edger Test
Feeler PI(1) : 0
X PI : 0
Y PI : 6
R PI : 1023
Feeler PI(2) : 986
Feeler Encoder : 1
Main Contact S/W : 0
Window S/W 1, Clamp S/W 1
Wheel 0, Pump1 0, Pump2 0

Main screen displays all sensor status of the edger. Press the function button and check the sensor status.

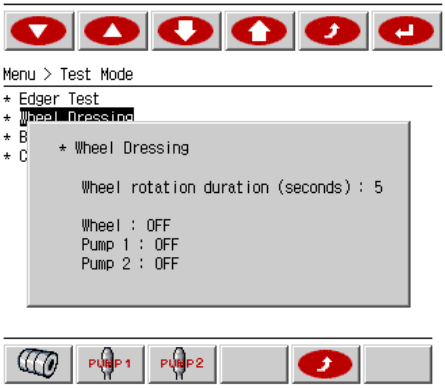
7.4 Wheel Dressing

⑧ Enter menu mode by pressing the [MENU] button for 2 seconds.



⑨ Select "Test Mode".

⑩ Select "Wheel Dressing".



Wheel Dressing is useful to maintain the wheel performance by way of removing the lens debris stick to the wheel.

① Press the [F1] button to start wheel dressing.
② Wheel rotate for 5 seconds.
③ Rubbing the appropriate Dressing Stick to the Wheel softly
(Dressing Sticks are provided as standard accessory in the toolbox)

- Dressing Stick for Finishing Wheel : WA320
- Dressing Stick for Polishing Wheel : WA1000
- Dressing Stick for Glass Roughing Wheel : WA320

NOTE

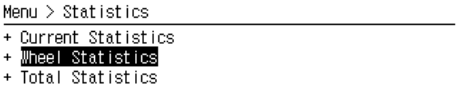
- It is recommended to carry out Wheel Dressing after 1,500 ~ 2,000 Edging Jobs in order to maintain the Wheel performance. (It may vary depending on the Edging Condition)

WARNING

- Be sure that any part of human body or clothing is not interfered with the edging wheel during the Wheel Dressing. Otherwise, the person may be seriously hurt.

7.5 Wheel Usage Information

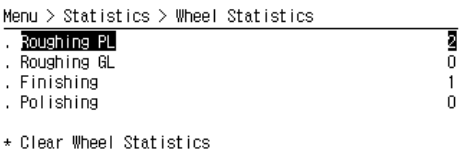
① Enter menu mode by pressing the [MENU] button for 2 seconds.



② Select "Statistics".

③ Select "Wheel Statistics".

④ Select item to clear.



⑤ Press the [STOP] button to clear wheel counter.

NOTE

- Edged Lens Counter is only used to control the warning message of wheel replacement and has nothing to do with the statistic information of the edged lens.
- The Edger can be started without the warning message of wheel replacement by way of reset the counter(recommended to clear counter after the wheel replacement).

7.6 Maintenance Tips

- Wheel Replacement

  It is recommended to keep the replacement cycle of Wheel in order to maintain the Edging Performance.

  - Replacement Cycle : 7,000 ~ 8,000 pieces of Lens edged

  Be sure to replace the Finishing Wheel and Polishing Wheel at the same time.

- **Regular Maintenance**

  It is recommended to keep the regular maintenance cycle in order to maintain the Edging Performance. Be sure to carry out the regular maintenance by the service technician of Huvitz or the technician authorized by Huvitz.

  - Regular Maintenance Cycle : 1,500 ~ 2,000 pieces of Lens edged

- Fuse Replacement

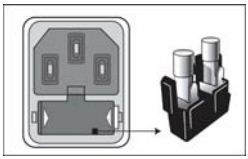
  Be sure to check the Fuse Specification for the replacement job.

  - Edger : 250V 10A . Frame Reader : 250V 3.15A . blocker : 250V 0.5A

NOTE

- Be sure to use the appropriate Fuse. Otherwise it may damage the product or cause the fire.

- Fuse Replacement in Edger and Frame Reader



Standard Accessory

Operator's Manual	1
Lens Adapter (Large)	3
Lens Adapter (Small)	5
Lens Adapter Holder (Large)	1
Lens Adapter Holder (Small)	1
LEAP-III Tape (500 Pads)	1
Lens Adapter Remover	1
Standard Frame (for Frame Reader Calibration)	1
Standard Pattern (for Frame Reader Calibration)	1
Pattern Holder	1
Dressing Stick (Polishing Wheel)	1
Dressing Stick (Finishing Wheel)	1
Dressing Stick (Glass Roughing Wheel)	1
Feeler Tip (Left)	1
Feeler Tip (Right)	1
Edger Calibration Jig	1
Fuse(10A)	2
Fuse(5A)	2
Fuse(3.15A)	2
Wrench Set	1
Carriage Fixing Bracket	1
Feeler Fixing Bracket	1
Water Drain Hose	1
Water Supply Hose	1
Water Drain Hose Fixing Clip	1
Power Cable (Edger)	1
Power Cable (Frame Reader & Blocker)	1
9-pin Dsub Serial Cable (Crossed)	1

Option

Water Supply System

Water Tank	1
Water Tank Carrier	1
Strainer	1
Pump 1	1
Pump 2	1
Edger Table	1

Specification

Edger

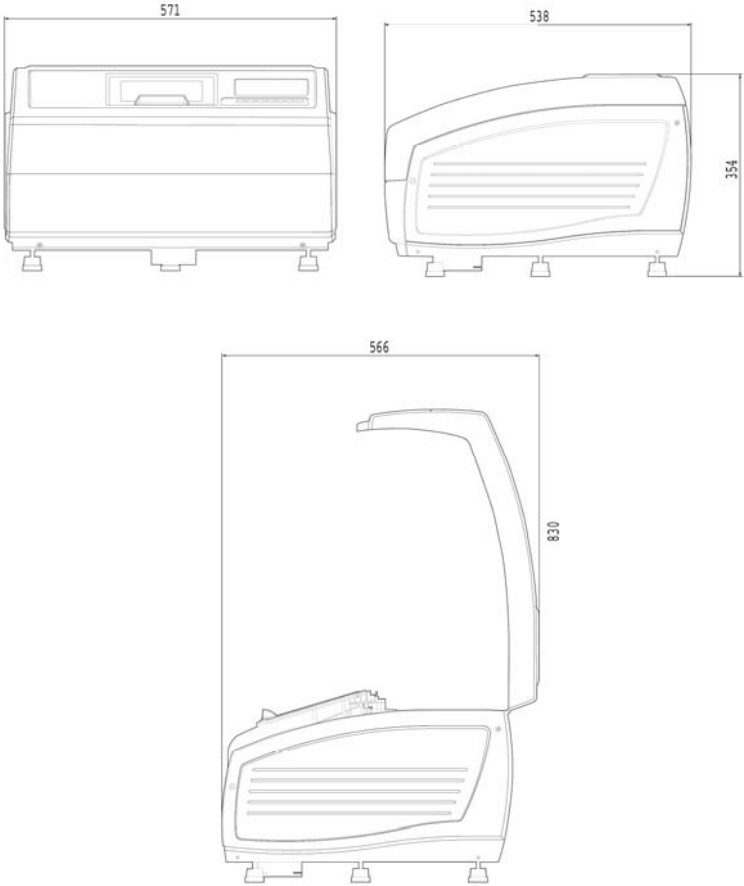
Edging System	Auto
Edging Mode	Beveling
	Flat Edging
	Polishing
Lens Material	Plastic, Glass, Polycarbonate, Hi-Index, Trivex®
Edging Size	Maximum 90mm
	Minimum 18mm
Weight	50 kg
Power Supply	AC 100/220V, 50/60Hz
Power Consumption	1200W(Maximum)
Dimension	570(W) x 540(D) x 360(H) mm
Others	User friendly display with TFT Color LCD

Frame Reader & Blocker

Dimension	280(W) x 300(D) x 230(H) mm
Tracing System	3D / Monocular
Weight	8 kg
Power Supply	AC 110/220V, 50/60Hz
Power Consumption	42W(Maximum)
Others	User friendly display with LCD(Black & White)

Drawings of System

Edger



Frame Reader & Blocker